

REMARKS

Claims 1-22 now appear in the above-identified application. Applicants have amended independent claims 1 and 7 to better distinguish their invention from the art of record. Also, applicants have added new claim 22 to claim a step now deleted from claim 1. Applicants' claims 1-22, as amended, distinguish over the art of record, for the reasons given below. Therefore, applicants traverse the claim rejections.

35 U.S.C. § 102(b) Rejection of Claims

Claims 1, 3, 6-7, 9, 14-15, 17, and 21 stand rejected under 35 U.S.C. § 102(b) as anticipated by the publication "Signal-dependent film grain noise generation using homomorphic adaptive filtering" by P. Campisi et al., published in the IEE Proceedings, *Visual Image Signal Processing*, Vol. 147, No. 3, June 2000, pages 283-287 (hereinafter, "the Campisi et al. paper"). Independent claims 1, 7, and 14, and the claims that depend therefrom, patentably distinguish over this reference.

The Campisi et al. paper describes a technique for simulating film grain in a photographic image by performing a homomorphic transformation to decouple noise from the image. The transformed image undergoes filtering to yield an "ideal" image that is substantially noise free. A constant (k) is estimated from statistics in the original (noisy) image and the ideal (noise free) image to enable calculation of film grain. The film grain is then added back into the ideal image.

Notwithstanding the examiner's assertions to the contrary, the Campisi et al. paper simply does not teach all of the features of applicants' amended claims. For example, amended claim 1 recites the steps of "receiving an **encoded** image" and **decoding** at least the **encoded** image. The Campisi et al. paper says nothing at all regarding the step of receiving an encoded image. Indeed, the Campisi et al. paper does not use the word encoding whatsoever. Given that the Campisi et al. paper does not use the word encoding whatsoever, the reference would not teach or suggest the step of decoding the image either.

To allege anticipation of applicants' claim 1 by the Campisi et al. paper, the examiner contends that the homomorphic transformation performed by Campisi et al.

constitutes the same thing as encoding. However, the teachings in Section 3 of the Campisi et al. paper belie the examiner's assertion. Applicants have reproduced the first paragraph of Section 3 below:

Homomorphic processing, when dealing with signals corrupted by signal-dependent noise, consists of devising a point-wise nonlinear transformation, whose purpose is to make the transformed noise additive and signal-independent. This technique was initially applied to decouple signals and multiplicative noise (as in the case of speckle noise). The corresponding transformation can be shown to be logarithmic.

To assist the examiner to better understand homomorphic transformations, applicants have attached a brief description of homomorphism as defined by Wikipidea.

In contrast, encoding of a video image does not constitute a point-wise transformation which makes signal noise independent. Rather, encoding constitutes a process which reduces information, such as video files, by predicting portions of the image based on temporal and or spatial redundancies. As described in applicants' specification at page 2, lines 14-25, the process of encoding (compressing) video files leads to a **loss** of film grain, rather than making the noise independent. Thus, the homomorphic transformation performed by Campisi et al. does not constitute the same or equivalent process as encoding. Thus, the examiner cannot rely on the Campisi et al. paper to teach applicants' steps of "receiving an **encoded** image" and **decoding** at least the **encoded** image.

Claim 7 recites the steps of (a) encoding an image (12) originally recorded on film; and (b) identifying the film grain present in the input image prior to encoding. As discussed above with respect to claim 1, the Campisi et al. paper does not teach or suggest the step of encoding an image. In this regard, applicants' reiterate that the homomorphic transformation performed by Campisi et al. does not constitute the same or equivalent process as encoding. Therefore, the Campisi et al. paper does not anticipate claim 7 and the claims that depend therefrom.

Since Campisi et al. does not teach applicants' encoding step, the Campisi et al. paper clearly would not suggest applicants' step of identifying the film grain present in the input image prior to encoding. Indeed, even if applicants were to concede that the homomorphic transformation performed by Campisi et al. did constitute the same process as encoding, which applicants strenuously deny, Campisi et al. determine film grain in

the image **after** the homomorphic transformation, not prior to encoding as recited in claim 7. For this reason, the Campisi et al. paper does not anticipate claim 7 and the claims that depend therefrom.

Claim 14 recites a decoder for decoding an image. As discussed above, the Campisi et al. paper says nothing whatsoever regarding the desirability of encoding an image. Moreover, the homomorphic transformation performed by Campisi et al. does not constitute the same or equivalent process as encoding. Given that Campisi et al. does not teach encoding, this paper certainly does not teach or suggest an encoder for decoding an image. For this reason, Campisi et al. does not anticipate claim 14 and the claims that depend therefrom.

Objection to Claims 2, 4-5, 8, 10-13, 16, and 18-20

The examiner has objected to claims 2, 4-5, 8, 10-13, 16, and 18-20 as depending from a rejected base claim. However, the examiner has indicated his willingness to allow these claims if re-written in independent form to include the features of their base and intervening claims.

Applicants appreciate the examiner's willingness to allow claims 2, 4-5, 8, 10-13, 16, and 18-20. However, as discussed above, independent claims 1, 7 and 14 all patentably distinguish over the art record. Therefore, applicants see no need to amend claims 2, 4-5, 8, 10-13, 16, and 18-20 at this juncture, but reserve the right to do so at a later time.

Conclusion

In view of the foregoing, applicants solicit entry of this amendment and allowance of the claims. If the Examiner cannot take such action, the Examiner should contact the applicant's attorney at (609) 734-6820 to arrange a mutually convenient date and time for a telephonic interview.

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No fees are believed due with regard to this Amendment. Please charge any fee or credit any overpayment to Deposit Account No. **07-0832**.

same or equivalent process as encoding.

Respectfully submitted,
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